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(19) **United States**(12) **Patent Application Publication**
Black et al.(10) **Pub. No.: US 2021/0370172 A1**(43) **Pub. Date: Dec. 2, 2021**(54) **DELIVERY OF SPECTATOR FEEDBACK
CONTENT TO VIRTUAL REALITY
ENVIRONMENTS PROVIDED BY HEAD
MOUNTED DISPLAY***A63F 13/5372* (2006.01)*A63F 13/213* (2006.01)*A63F 13/5378* (2006.01)*A63F 13/86* (2006.01)*G06T 7/73* (2006.01)*G06F 3/01* (2006.01)*G06K 9/00* (2006.01)*G06T 11/60* (2006.01)*G10L 17/22* (2006.01)(71) Applicant: **Sony Interactive Entertainment Inc.**,
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(US)(52) **U.S. Cl.**CPC .. *A63F 13/537* (2014.09); *G06T 2207/30196*
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2300/8082 (2013.01); *A63F 13/58* (2014.09)(21) Appl. No.: **17/386,468**(22) Filed: **Jul. 27, 2021****Related U.S. Application Data**(63) Continuation of application No. 15/428,133, filed on
Feb. 8, 2017, now Pat. No. 11,071,915.(60) Provisional application No. 62/402,994, filed on Sep.
30, 2016.**Publication Classification**(51) **Int. Cl.***A63F 13/537* (2006.01)*A63F 13/58* (2006.01)*A63F 13/5375* (2006.01)*A63F 13/26* (2006.01)*A63F 13/56* (2006.01)

(57)

ABSTRACT

Systems and methods for receiving a scene by a head mounted display (HMD) of an HMD user. One method includes receiving image data of a real world space where the HMD is located. The image data is analyzed to identify positional data on the one or more spectators present in the real world space. The method includes identifying, based on the positional data, that a personal space of a spectator is being encroached. The identifying causing an indicator to alert the HMD user of said encroachment of said personal space of the spectator.

